

REMARKS

In view of the following remarks responsive to the Office Action dated May 17, 2010, Applicant respectfully requests favorable reconsideration of this application.

No amendments to the specification, drawings, or claims are offered herein.

Applicant respectfully thanks the Office for the withdrawal of the previous rejections in view of Applicant's arguments. In particular, the Office had previously rejected the present claims using Tachikawa as the primary reference for its alleged teaching of a zone of reduced oxygen concentration extending to a depth of one millimeter, which exceeded and encompassed the various claimed depths of between 75 microns and 200 microns. However, as Applicant pointed out, the rejection relied on a typographical error in Tachikawa that stated that the reduced oxygen zone was 1mm deep, whereas it actually was 1 micron deep.

Interestingly, despite the withdrawal of the previous rejection, in the latest Office Action, the Office rejects the exact same claims based on the exact same combinations of references as in the previous Office Action, but with a different interpretation of the claim language. Particularly, as noted above, the Office has recognized that Tachikawa teaches a reduced oxygen zone to a depth of only 1 micron, not 1 mm, but has interpreted the claim language as encompassing reduced oxygen zones of 1 micron in depth.

Specifically, the Office newly rejects claims 2-6 under 35 U.S.C. §112, second paragraph, as being indefinite noting, for instance, that claim 2 recites the limitation "said zone of reduced oxygen concentration including said first major surface and all points in said substrate which are within 100 microns of said first major surface". The

Office asserts that this renders the claim indefinite because “within 100 microns” does not further limit the “within 75 microns” limitation recited in claim 1. The Office asserts that it instead broadens the scope of the claim, whereas the dependent claim must narrow the scope of the claim. The Office applied the same reasoning to claims 3-6 which recite, respectively, that the zone of reduced oxygen has a thickness of 125 microns, 150 microns, 175 microns, and 200 microns, respectively.

Furthermore, in all the prior art rejections, the Office is relying on Tachikawa for teaching the zone of reduced oxygen meeting the thickness limitations of the claims. Particularly, the Office notes that Tachikawa teaches a zone of reduced oxygen to a depth of 1 micron from the first major surface of the substrate, “which is within 75 microns, 100 microns, 125 microns, 150 microns, 175 microns, or 200 microns”. See Office Action.

Both of these rejections reflect a misinterpretation of the claim language as reciting a maximum depth, rather than a minimum depth of the reduced oxygen zone. Particularly, one of the goals of the disclosed process is to make the zone of reduced oxygen thicker, not thinner. That is why, the dependent claims, which each recite a zone of reduced oxygen that is thicker than the independent claim, actually constitutes a narrowing of the claim, not a broadening of the claim as asserted by the Office. That is also why the present invention still patentably distinguishes over Tachikawa. In fact, the Office’s new interpretation of the claim language is the exact opposite of the Office’s interpretation of the claim language in the previous Office Action - when the Office asserted that the claim read on Tachikawa (at that time, believed to recite a 1mm thick reduced oxygen zone) because the reduced oxygen zone in

Tachikawa was (believed to be) at least as thick as the claimed reduced oxygen zone, rather than at least as thin.

The Office was correctly interpreting the claim language in the previous Office Action, and is now incorrectly interpreting it. More particularly, the claim language as currently pending recites, in effect, that the reduced oxygen zone is at least x microns thick (where "x" is either 75 microns, 100 microns, 125 microns, 150 microns, 175 microns, or 200 microns, depending on the particular claim). However, the Office is interpreting the claims to recite the opposite, i.e., that the reduced oxygen zone is not more than x microns thick. This is simply a mis-reading of the claim language.

Particularly, using claim 1 as an example, it recites "said zone of reduced oxygen concentration including said first major surface and all points in said structure which are within 75 microns of said first major surface". Accordingly, a structure such as Tachikawa, in which the reduced oxygen zone is only 1 micron thick does not meet this limitation because there are points in said structure that are within 75 microns of said first major surface that do not have reduced oxygen concentrations, namely, all points that are more than a micron and less than 75 microns away from the first major surface.

The Office's first interpretation of the claims taken in the previous Office Action was actually the correct interpretation insofar as any reference that had a reduced oxygen zone of 75 microns or greater (e.g., 1mm) would meet that limitation.

Accordingly, in conclusion, claims 2-6 are not indefinite. Furthermore, all of the claims patentably distinguish over the prior art of record for exactly the reasons set forth in response to the previous Office Action, namely, because Tachikawa teaches a reduced oxygen zone that is only 1 micron thick, not at least 75 microns thick, as recited

in claim 1. All other claims depend from claim 1 and therefore distinguish over the prior art of record for at least the same reason as claim 1. None of the other prior art applied against the claims discloses the aforementioned teachings lacking from Tachikawa.

Applicants respectfully request the Office to issue a Notice of Allowance at the earliest possible date. The Examiner is invited to contact Applicants' undersigned counsel by telephone call in order to further the prosecution of this case in any way.

Respectfully submitted,

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Date

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